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STANDARD SPECIFICATIONS
FOR
BOOK PRINTING

FOR THE USE OF

STATE AND MUNICIPAL GOVERNMENTS
PUBLISHERS, UNIVERSITIES AND
OTHER INSTITUTIONS

BY

JOSEPH B. SMARR
CHIEF CLERK TO THE MAYOR

WITH A FOREWORD
BY
MORRIS L. COOKE
DIRECTOR DEPARTMENT PUBLIC WORKS

PUBLISHED BY THE
DEPARTMENT OF PUBLIC WORKS
CITY OF PHILADELPHIA
1914

CALIFORNIA

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FOREWORD

A proper purchasing system is an absolutely essential feature of a municipal government. Definite specifications for everything is the prime essential of good buying. Contract graft of every kind results generally from loosely drawn specifications. This is the commonest agency through which municipal officials and methods are corrupted.

The printing industry is approximately four hundred years old, and many of its implements, methods, and practices have remained unchanged during this entire period. It is one of the few industries that has consistently and successfully resisted all efforts toward its systematization. The thoughts of the leading men during the last twenty years have been devoted largely to a propaganda in favor of a highly developed cost system. This industry probably puts a larger percentage of its gross receipts into ascertaining manufacturing costs than any other. In the mind of the average printer, the ascertaining of costs is thought to be fundamental to efficiency and prosperity.

As a matter of fact, the keeping of costs is only comparable to book-keeping or accounting. Cost keeping is, at best, only a history of something that has happened,—recorded data. As practiced in the printing industry it has absolutely nothing to do with efficiency or the improvement of methods; it is little more than a memorandum bearing only indirectly upon the cutting down of manufacturing costs. The inevitable result of a highly developed cost system, maintained in the absence of an active crusade for better methods, is that the charges to the public are constantly increased. This is exactly what has gone on in printing costs all over the country. This has been greatly facilitated during the last ten years by the formation in all

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the large cities of printers boards of trade, which organizations have had price control as their special field.

The printing industry has therefore made practically no effort toward standardization. On the contrary, it has resisted all efforts toward a simplification of its practices. It was only a few years ago that there was no standardization in the steel industry. About 25 years ago, the Carnegie Steel company issued its hand-book of standard shapes. Since then, these hand-books have become an indispensible mechanism of every engineering and architectural office. Every designer of buildings has been brought to realize that there is everything to gain and nothing to lose from using standard shapes. In fact, the standardization in the steel industry has gone so far that it is practically impossible to use anything but standard shapes, because deliveries on anything irregular are so uncertain, and so apt to be delayed that architects, builders, contractors and others avoid their use in every possible way.

Obviously, the only people to standardize an industry are the manufacturers in it. The people who buy the materials are in no position to standardize anything except what they, themselves, buy. There is a limit as to how far standardization of this kind brought about by single users of the product can affect an industry. It would not be expected that even a large user of structural iron shapes, who had standardized them for his own use, would have any special influence upon the weight and dimensions of the shapes used by others.

The application of this to the printing industry is obvious. It is only the printers themselves who can standardize the world's printing. Any one user of printing can do little more than standardize what he himself uses. It would be far better if the printers, instead of spending practically all their time in discussing costs, and in conferring with one another as to how to get the public to pay the prices asked would devote their energies towards

standardizing printing. If this were done, before long, the printer would attain the status of a manufacturer. At the present time he is a sort of hybrid—half manufacturer and half artist. He is put in a class by himself. The average printer's credit at the banks, and elsewhere, is far below that of the average manufacturer, for the simple reason that conditions in the industry do not warrant according him any different position.

These specifications for the annual reports of the Mayor and the directors of several administrative departments of the City of Philadelphia were written without any idea that they would be used for actually buying this printing. The author knew nothing about printing and simply made a few months' study of it in the hope of being able to draft a set of specifications that could be generally used by the officials of cities and states and others in buying printing of this kind. As a matter of fact, when the specifications were finished, they were used for buying the printing of the 1913 reports, and through their use, the cost of the printing was more than cut in half. The 1913 bid totalled something less than $6,000, whereas, for the year preceding, the cost had been $18,000, and the average for five years before that was approximately $12,250.

From the standpoint of the printer, these specifications have the advantage that it takes him perhaps a half an hour to make his bid. The old method was to assemble the copy, on the theory that the printer would sit down and carefully analyze it and make his bid after its inspection. By the development of a system of carefully defined unit prices, with a table of approximate quantities for the different kinds of work, based upon past experience, all guess work is eliminated and the printer is enabled to make accurate quotations with the least possible expenditure of time.

These specifications are so drawn that they can be made available for practically any city or state desiring to use

them. Matters of taste as to size of page, etc., can be altered simply by changing a few figures.

There is almost an entire absence of definite specifications in this printing field. Someone before long will doubtless draw up similar specifications for job work. While individual purchases in this job field are small, they represent in total by far the largest amount of money expended for printing. Through the drawing of definite specifications and having free and open bidding for all kinds of printing, a saving of a large amount of money would necessarily result.

Revelations made a few months ago in a report to the Governor of the State of New York, as to the exorbitant prices paid for state printing, makes one question whether there are not a great many cities and states that can profit by this publication. As the preparation of these specifications was undertaken at my suggestion, and as the author has done an exceptionally good piece of work, it is a great pleasure to recommend to printers and purchasing agents a very careful perusal of the following pages.

MORRIS L. COOKE,

August, 1914. *Director.*

UNIV. OF CALIFORNIA

INTRODUCTION

The specifications here exhibited differ from those in common use chiefly in this: that they give to bidders information of the work to be done sufficiently detailed and exact to enable them to bid closely, and declare particularly what the printer shall do in execution of the contract. It seems rather surprising to say that the difference between the two is what really is the whole purpose of a specification, but a glance at the forms issued and in use in Philadelphia, Boston and a number of other cities in the country will confirm the statement: so little real information is given on which to base a bid, so much is left to conjecture, that printers who have not done that particular work must make a wide margin, in estimating, for things which they may have overlooked, and for uncertainty in the contract's requirements. In one city the wording of a clause made it possible for the contractor to receive four times the amount he himself would have charged under properly drawn specifications; and in all the forms examined there is the same looseness of method, the same lack of data which printers must have for a guide, the same lack of means for checking bills. The final consequence has been the elimination of real competition: one firm is awarded the contract regularly, for it is familiar, by experience, with the work to be done; it stands in, perhaps, with the municipal authorities, and, because other firms judge it useless to bid, obtains what is practically a monopoly of the printing work.

This, in itself, while not good business form, would not, perhaps, be detrimental to the City's interests, if it could be assured of honesty on the part of the contractor, and of energy and technical knowledge on the part of those of its

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employees who are charged with overseeing the work. Confidence in the one, no matter how well placed, can never be adequate, alone, for the City's protection; the nature of the work renders the other assurance unlikely, at present. While a city's printing expense in the aggregate, amounts to a large sum, it is split up into a vast number of small jobs, which, because of the average slight cost, never receive much attention; and the one or two large contracts are not thought sufficient to justify the employment of a man skilled in the work.

This condition makes it all the more advisable to have carefully drawn specifications, which should allow no room for difference of opinion, which should declare plainly and fully what shall be done; for so there will be no opportunity for making overcharges, either those that seem right and regular, or those that are patently fraudulent.

The specifications herein shown have been drawn with the view of correcting these faults of the forms in general use. Their adoption will necessitate more attention on the part of the authorities, but the economies effected will repay the cost of the time which may be spent in the execution of the contract. There is another advantage—an intangible one, which will accrue to the city official: the inevitable judgment of the printer who is asked to bid on a loosely drawn specification is that there is collusion between one contractor and the department officers; faults that are due to a lack of technical knowledge are ascribed to criminal intent; and the officials lose in reputation just as much as the city loses in money. The correction of that judgment should be an added incentive to the adoption of a specification form that will stop, as well, the money loss.

Printing work is divided into four distinct parts: the purchase of paper, photo-engraving, composition and press-work, and book-binding. It is usual to let all the work in one contract to the printer, who has, by far, the largest share; and here is the first error.

It is vain to expect low bids from persons not engaged in the particular class of work bid upon. A printer who bids for furnishing paper, first obtains prices from the paper makers, and then puts in his bid at a price varying from ten to twenty-five per cent higher; the increase is to compensate him for the expenditure of money for the paper's purchase and for the long time he must wait before he is repaid by the government. Similarly with the binding; printers are not, ordinarily, equipped to do this work economically; they must have it done by the book-binders, whose price is considerably increased when it is passed on to the city.

It is advisable, therefore, to divide the work so that each part may be estimated upon by persons regularly engaged in the particular business. The following divisions have been made in these specifications: paper; photo-engraving; composition, presswork and pamphlet binding; and book binding. A discussion of those articles of the specifications that require explanation or comment, follows; the specifications themselves are made for the city of Philadelphia, and are designed, in particulars, for the documents there issued.

The specifications and bid form for the paper requires little comment; the method adopted is thought to be fair and very practicable: first find a suitable paper, and require that the paper bid on and to be furnished shall be equal in quality. It would, perhaps, be desirable to declare that the paper shall be made according to a certain formula given, but where the quantity needed is comparatively small, as in Philadelphia, the mills would not find it profitable to make a special run; either bids would be very high, or firms would not bid at all. Inasmuch as paper dealers sometimes take advantage of the inexperience of purchasers to substitute a cheaper and inferior paper for that specified and bid upon, it is always advisable to test that which is furnished. Notice that this will be done is,

often, sufficient to deter the dealer from making such a substitution.

PHOTO-ENGRAVING. Ordinarily not much attention is paid to this class of work. It seems to be merely incidental to the more important printing, and, apparently, calls for no great outlay; but for this very reason there is freer opportunity for graft than in either the composition or binding.

The specifications do not, ordinarily, declare how much engraving work will be ordered, and the supposition is, comparatively little. The honest bidder will submit a reasonable price; the favored contractor will bid two, three and even four times that price; and as the quotations are made per square inch, the difference between six and twenty cents seems rather insignificant. But for municipal or governmental reports illustrations are abundantly used; on an average, four or five thousand square inches of half tone and line plates are made, each year; so the difference is quite a respectable sum. Indeed in one year, for a Philadelphia report, the cost of half tone and line plates was nearly two thousand dollars, of which two-thirds was clear profit to the printing contractor.

This, in itself, shows the advisability of accepting bids only from firms regularly engaged in the work bid upon; for engravers would never think of asking 20 cents per square inch for line work, or 25 cents for ordinary half tones; the trade prices of which are 5 to 7 for line and 10 to 15 cents for half tone work.

Lithograph work should not, in ordinary cases, be specified: it is expensive for works of reference. Where, however, it is advisable to have drawings lithographed, a copy of the plate, in colors, should be attached to the specifications, the quantity to be printed given, and a price asked for furnishing the plates complete. If the number of copies required cannot be ascertained until after bids have been received, a price should be asked for an approximate number, and a price for each additional hundred. In no case

should bids be asked "per hundred" without stating the number of copies to be ordered; for in such case the bidder estimates on furnishing one hundred only, for which the price is very high because of the cost of making plates, and for each additional hundred ordered the purchaser pays again for the plates; whereas, if the bid is submitted in the form first above given, the price for each additional hundred is about one-sixth that of the first, or even less.

Composition. The highest degree of particularity is desirable, and even necessary, in writing specifications for this division of the work; the type face, type size, method of measurement, should all be stated with sufficient exactness to make evasion or misunderstanding impossible. The measurement especially needs clear definition; the common form, per thousand ems, is objectionable in that it affords room for difference of opinion; thus, for composition set with six point slug, measurement was made as for solid matter, and so charged; the charge was defended on the ground that the compositors were paid on that basis; but it is also customary to measure the line width and multiply that by the number of lines; a method which excludes leads and slugs. Here was a conflict which ought never to have arisen; the looseness of the specifications cost the city a considerable sum of money. The method adopted, of asking a price per page and giving the exact size of the type page, effectually obviates all dispute.

It should be noted that an estimate is made of the number of pages of composed matter which the reports will contain. Without such an estimate it would not be possible fairly to determine who is the low bidder; one firm might bid low on one size of type, another on a second size, and unless the probable cost of the work can be figured fairly closely from the bids, by means of the estimate of quantities, it might turn out that what seemed to be a low bid is actually high.

This remark applies equally to the presswork and bind-

ing. It often happens that one firm bids high on composition, low on presswork and binding; another may be low on composition and high on presswork; and unless quantities are given, it is utterly impossible to determine which is the low bid.

Presswork. In some of the cities it has been customary to ask for a bid on presswork, per token, without giving the size of the forms or the quantities (number of impressions to be run off). It is utterly impossible for a printer to quote a price in such a manner; the cost of presswork varies with the size of the form and with the number of impressions; fifty cents per token for a 16 page form would be proper for a large quantity, while $2.50 per token for the same size form would not be too much for a small quantity. The appearance of such an item in a specification is, in the opinion of the experienced printer, conclusive evidence of collusion between a favored contractor and the city officials. For it is possible, where a low price is bid, to compel the contractor to impose 32's and 64's, if he is not favored; conversely, a contractor who is "in" may bid what is a reasonable price for a 32, and then impose in 16's and 8's; the cost of working the small forms is considerably less than for the larger, and the presswork is increased two and four fold.

Here also, therefore, as in the other divisions of the work, the printer should be advised exactly what he will have to do. The forms are fixed as 32's the largest which can be used advantageously for the weight of paper specified; larger forms would make the books clumsy.

Attention is called to the bill form upon which the contractor must make composition and presswork charges; it is designed to show clearly what the work is for which charges are made. A lack of method in this particular makes it rather easy for a printer dishonestly inclined to pad a presswork bill considerably.

Time work on alterations. In no other division has it

been found so difficult to control or oversee the action of the contractor. There is very little to show what time was spent in making alterations, and, very often, the omission or addition of a word may render necessary the overrunning of an entire paragraph, or recasting, as the case may be. Consequently, the unscrupulous printer feels that here he can overcharge with comparative safety, and bill for time which was never spent. There is no method known which can accurately check the charges made; the one adopted, of showing the changes which were actually made in the composed matter, enables one to judge whether the charge is inflated or reasonable; then, too, it is thought unlikely that the compositor will sign a false statement when he derives no advantage from the act.

Pamphlet binding. It was thought advisable to separate this from the book (leather and cloth) binding, because most large printers are equipped to do the one, while they are not, for the other. The great variety of bureau and departmental reports, in size and contents, makes it impossible to have a simpler and less multiform bid schedule than the one adopted, which, while it assures exactitude of charge, makes necessary only a little additional bookkeeping.

The prices for binding pamphlets vary with the number of forms, inserts, etc.; the larger the number of forms to be folded, the number of plates to be inserted and folded, the higher the cost. The specifications provide, therefore, for a graded increase in size of the book; the price per volume is to include folding, trimming, wiring and pasting of covers. Inserts and folds are to be charged for at so much per thousand; for, as this work is done separately, by hand, it matters little whether the plates are inserted in one book or another; the cost is the same.

The form of specification, both for pamphlet and book binding, now in use in most cities, makes it impossible for a stranger to the work to bid intelligently. In one specifi-

cation examined, all the binding work, pamphlet and book, was included in one form of estimate; no information was given to the bidder about the size or number of volumes to be bound; since the books actually varied from 20 pages, without inserts, to 1100 pages, with a hundred inserts, it was clearly impossible to make a unit price, which was asked for. A blanket estimate was, therefore, made even by the contractor familiar with the work, to cover all binding, for the same quantity, approximately, as bound the last year. The inadequacy and absurdity of the bid is clear; for what would happen if a larger number of volumes were ordered, and how the increase would be charged, cannot even be guessed.

Book binding. The form of bid for this work is similar to that for pamphlet binding; the specifications are as detailed and particular as is desirable. It is common, on this kind of work, to ask a price per volume, complete; but this cannot well be done for municipal reports, which vary considerably in size and number of inserts.

A few words may be said concerning the attitude of printers toward government work. It has been the experience in Philadelphia that the largest and best reputed firms were reluctant to bid upon any city printing; they felt that their work in estimating would be thrown away, because the contract in any event, would be awarded to the favored political contractor; and some even expressed the fear that, even if they should bid low and obtain the contract, they would be harassed by the officials and the specifications interpreted in such a manner that they would surely lose in the undertaking.

This, of course, was before the terms of these specifications were explained to them; but even then it required much persuasive argument, and in some cases, pleading and calling upon the civic pride of the printer, before a promise was made to submit a bid; so deeply rooted was the belief that the city official is corrupt and his methods un-

fair. The experience of Philadelphia is, no doubt, the experience of all other cities of the country; until business men are shown, in a practical way, that they will be treated just as other business men would treat them, they will continue to suspect and keep aloof from all city work.

The adoption of a fair and adequate specification—one that can be interpreted only one way, will do much to change the feeling of mistrust, and will convince the printer that he will be fairly treated. And once the most reputable firms are interested it cannot but result that the work will be improved in quality and its cost diminished.

Another word on the subject of advertising: it will be found profitable to ask for bids from printers located in some of the surrounding towns and cities. All the larger cities have master printers associations, the purpose of which is to prevent ruinous competition among the members. A printer who has had a particular job for any length of time, comes, however, to think of it as his own —that he has acquired it for himself, his heirs and assigns. If other printers are asked to estimate on that work, he advises the association, and asks for protection; the association then fixes a price below which the other members may not bid. This combination can, ordinarily, be defeated by calling in outside printers; but if the names of the bidders are known, the association of the one town will communicate with that of the other, and very likely collaborate with it in fixing the price. This, it is true, may not be an exorbitant one, but the combination effectually prevents competitive bidding.

JOSEPH B. SMARR.

August, 1914.

SPECIFICATIONS

FOR

PAPER, PHOTO-ENGRAVING, COMPOSITION PRESSWORK, PAMPHLET BINDING AND BOOK BINDING

FOR THE ANNUAL REPORTS OF THE MUNICIPAL DEPARTMENTS OF THE CITY OF PHILADELPHIA, FOR THE YEAR 1913

Bids will be received, and the work will be divided, under four headings, as follows:

1 furnishing paper
2 photo-engraving
3 composition, presswork and pamphlet binding
4 book binding

Bids will be received only from persons regularly engaged in the class of work bid for. Conditional bids will not be considered. Bids must be made upon the proposal form attached to the specifications for each of the four heads noted above.

Ample time has been allowed for the completion of all work under these specifications; failure to complete the work on time will subject the contractor to a penalty of twenty-five dollars per day for every day of delay in turning out the work at the times fixed by these specifications. This provision is made a condition of the contract.

The right is reserved to reject all bids when deemed best for the interests of the City.

Proposals must be accompanied by a certificate from the City Solicitor that a proposal bond for five hundred dollars has been filed with him.

The successful bidder will be required to file a bond for fifty per cent. of the amount of the contract, or deposit a certified check in the name of the Director for twenty-five per cent. of such amount.

BOOK PAPER

Book paper will be English finish, high white, 38 by 50/100, 500 sheets to the ream cased; must be equal to the sample attached in color, cleanliness, strength, finish and texture; and must be suitable for printing 133 line halftones; about 75 reams will be ordered.

Cover paper will be 20 by 25/65, 500 sheets to the ream equal in quality to the sample attached (Dill & Collins Duchess, listed at 9c per pound); about two reams will be ordered.

Bidders will be required to submit samples of the paper bid on. The book paper delivered by the contractor will be tested, and if found deficient in quality will be rejected. Ten days will be allowed for delivery.

The prices bid will include delivery to the printer, if in Philadelphia; if without the city, delivery to the railroad, in which case the paper contractor will pay freight and charge it to the City as an extra. Bills must be submitted in triplicate, accompanied by vouchers from the printer that the quantity of paper ordered has been delivered.

Director,
Department of Supplies.

The undersigned will furnish book and cover paper, as specified above, as follows:

38 by 50/100 book, English finish (approx. 75 reams)

.....per lb.

20 by 25/65 cover paper, Duchess or equal (2 reams)

.....per lb.

.....

PHOTO-ENGRAVING

Half tone and line engravings will be printed upon paper 38 by 50/100, English finish; plates must be furnished complete for printing, set type high upon wood guaranteed not to warp.

Plates shall be made direct from the copies furnished, which will be clear and free from defects which may prevent the engraver from turning out good work. All cuts must be etched deep, clean and sharp. Half tone engravings will be made on 133 line screen, from photographs or drawings; line engravings will be made from pen and ink drawings on vellum. All work will be finished square.

The engraver will be required to furnish proofs upon the paper to be used, which must be passed for workmanship before the cuts will be accepted; all cuts rejected must be worked over until the required effect is obtained, or new cuts furnished, of approved quality.

About 1000 square inches of line work and about 1500 square inches of half tone engraving will be required, no single plate to contain less than 12 square inches. The low bid will be calculated upon these quantities. All cuts ordered must be delivered complete, to the printer, within one week after the order is given and copy furnished; proofs furnished will be returned promptly, so that the work may not be delayed. If the printer is located without the city, expressage shall be charged to the City as an extra. All work will be black.

Alterations that may be made to line cuts now owned by the City, so that they may be used for the present work, will be charged for by the hour. Bills for alterations must be accompanied by proofs of the cut, before and after alterations made, with a memorandum signed by the workman who has made them, showing how many hours were spent upon it.

Each cut made shall be charged separately, and a proof of it must accompany the bill. All original drawings and photographs must be returned with the cuts, before the bills will be approved.

Director,
Department of Supplies:

The undersigned proposes to make half tone and line engravings for the annual departmental reports for the year 1913, according to the specifications attached, as follows:

half tone engravings, one color,.....per sq. in.

line engravings, one color,.....per sq. in.

alterations to engravings,.....per hour

.....

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